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ABSTRACT

The concept of an educational goal indicator (EGI) was devised as a measure of a post-educational condition or behavior that an educational system is supposed to produce or affect. In this sense it is intended to be a "true" measure of the schools' accomplishments. A search was made, as part of the New Jersey Needs Assessment program to identify potentially useful EGI's and to determine what steps might be taken to develop others. The search was limited to those indicators for which data were already available in existing sources--primarily various publications and a public opinion survey being conducted, into which were introduced several items that could be the basis for EGI's. The results of the search are discussed under the headings of the 11 outcome goals defined by part of the Needs Assessment program. The findings suggest a distinction between two types of indicators, intentional and incidental. Intentional indicators are those based on data gathered expressly for the purpose of measuring the degree of attainment of educational goals; incidental indicators are based on data gathered for some other purpose. A comparison of the two types based on ten characteristics of good EGI's reveals that intentional indicators are preferable. (KM)

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PR-73-1

# EDUCATIONAL GOAL INDICATORS FOR NEW JERSEY

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Robert A. Feldmesser

February 1973

EDUCATIONAL TESTING SERVICE
PRINCETON, NEW JERSEY

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# EDUCATIONAL GOAL INDICATORS FOR NEW JERSEY

A report prepared for the
Needs Assessment Advisory Council
of the
New Jersey Department of Education

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Princeton, New Jersey
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A common way of finding out how well schools are accomplishing the goals of education is by administering tests to students. Yet tests have certain deficiencies for this purpose. Test scores may tell us whether knowledge, skills, and understandings have been acquired by students, but they do not tell us whether the knowledge, skills, and understandings are actually put to use by people when they are no longer students. That is, they reveal nothing about the extent to which the schools are bringing about the life-long attitudes and behaviors that are the ultimate aims of education. Secondly, there are some kinds of educational goals that are not satisfactorily measured by tests or that may not be observable in schools at all--for example, adequate fulfillment of parental responsibilities, or conscientious participation in political decision-making. Thirdly, the widespread administration of tests sometimes gives rise to the fear that the schools are devoting inordinate effort to training students for taking the tests, thus narrowing and distorting the educational process. Finally, test scores have an air of "artificiality" about them; they appear to be numbers that have no relation to "real-life" activities and so are unconvincing to many people as a measure of meaningful educational progress.

The concept of an "educational goal indicator" (EGI) was devised to overcome these deficiencies. An EGI is a measure not of what students are acquiring in school but rather of a post-educational condition or behavior that an educational system is supposed to produce or affect. In this sense it is intended to be a "true" measure of the schools' accomplishments.

Indicators need not be limited to what can be observed in schools; they can cover the entire range of adult life. They avoid the dangers of "teaching to the tests"; since an indicator would be based on behavior that is significant in its own right, "teaching to the indicator" would be exactly what the schools would be expected to do. And because indicators would be expressed in terms of actual everyday behaviors and events, they would be readily understood and directly meaningful. As an illustration which sums up these features,the proportion of the eligible population in New Jersey who vote in a presidential election would be an indicator of the degree of attainment of the goal that "the public schools of New Jersey should help every person in the state to become an effective and responsible contributor to the decision-making processes of the political and other institutions of the community, state, country, and world."

The example also suggests, however, that there are important qualifications on the use of EGI's. First, no single indicator can be regarded as an adequate measure of goal attainment (Etzioni and Lehman, 1967). Educational goals are of necessity stated in broad terms; they refer to many different kinds of behavior. Effective and responsible contributions to decision-making processes can include not only voting--and voting not only in presidential elections--but also keeping well informed, engaging in discussion of political issues and candidates, attending meetings of governing bodies, writing letters to legislative representatives, running for office, and numerous other activities, not to mention forms of participation in the decision-making processes of institutions other than the political ones, such

as voluntary organizations. On the other hand, EGI's cannot be taken as unequivocal measures of the effectiveness of the educational system, and particularly not of the educational system of a single state. Many of New Jersey's residents received all or part of their education outside the state, and many people who were educated in New Jersey now reside elsewhere. (Moreover, the data on which EGI's are based do not always identify even the state of residence.) In addition, EGI's are also affected by many factors more or less beyond the control of the schools--factors such as conditions in the home and community, economic trends, events on the national and international scene, etc.[1] Specific illustrations of these and other "extraneous" factors will be given later.

Nevertheless, in view of their apparent advantages, an effort was made, as part of the New Jersey Needs Assessment program, to identify potentially useful EGI's and to determine what steps might be taken to develop others. A "potentially useful EGI" was defined for this purpose as a repeatable measure of a condition or behavior that occurs outside of school but that it is reasonable to expect can be affected by experiences within the formal educational system of preschool, elementary, secondary, vocational, and adult-education (but not college or university) programs. The criterion

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[1] It should be pointed out that this is also true of test scores. More and more, it is coming to be recognized that what students learn in school is much influenced by what is happening outside the schools. The difference between EGI's and test scores is, in this respect, a matter of degree.

of repeatability was included to insure that the measure could be taken at two or more occasions to determine the degree of progress toward goal attainment that was being made.

In order to keep the search for indicators within a realistic framework, it was limited to those for which data were already available in existing sources. (One consequence of this decision is that the EGI's refer to different dates.) Since the interest was, of course, in EGI's for New Jersey, the sources were chiefly publications of various state agencies, although publications of some federal and private agencies were examined as well. In addition, a public-opinion survey was being conducted by Opinion Research Corporation (ORC) in connection with the Needs Assessment program, and the opportunity was used to introduce into the survey instrument a number of items which could be the basis for EGI's. This report is an account of the results of the search, organized under the headings of the outcome goals which emerged from the "Our Schools" project of the Needs Assessment program.[2]

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[2] By their nature, EGI's (and test scores, too, for that matter) are relevant only to outcome goals, not to process goals. Attainment of the latter type of goals must be measured in terms of the activities of the schools, since process goals by definition do not refer explicitly to any effects upon students.

## Outcome Goal I

> The public schools of New Jersey should help every person in the state to acquire basic skills in obtaining information, solving problems, thinking critically, and communicating effectively.

Mastery of the traditional three R's can be regarded as a necessary part of this goal, but clearly it also involves the skills of listening and speaking, and--particularly with reference to "solving problems" and "thinking critically"--the application of reasoning and sound judgment. However, the data located as potential EGI's for this goal tend to emphasize verbal and mathematical skills and are thus very limited measures of its attainment. Even at that, they have severe defects.

One figure frequently cited as an indicator of mastery of the basic skills is the proportion of men who qualify for military conscription by their scores on the pre-induction mental test. This test, known as the Armed Forces Qualifying Test (AFQT), consists of 100 multiple-choice items equally distributed among the content areas of vocabulary and verbal concepts, arithmetic reasoning and computation, spatial relations, and mechanical ability, and the test scores have been shown to be related to level of education (Karpinos, 1967). Qualified examinees are those whose scores are in approximately the highest 69 percent of all scores, plus some whose scores are lower than that. (For complete details, see Office of the Surgeon General, 1967, pp. 8-11.)

Table 1 shows the percentages of examinees who qualified on this test in New Jersey and in the United States as a whole, for 1965 and 1968.

TABLE 1. PERCENT MEETING MENTAL REQUIREMENTS ON ARMED FORCES PRE-INDUCTION EXAMINATION, 1965 AND 1968

| | 1965 | | | 1968 | | |
|---|---|---|---|---|---|---|
| | U.S. | N.J. | Ratio N.J./U.S. | U.S. | N.J. | Ratio N.J./U.S. |
| Total number examined | 1,228,976 | 36,690 | - | 1,164,912 | 35,098 | - |
| Percent meeting mental requirements | | | | | | |
| Among all examinees | 79.1 | 83.5 | 1.06 | 88.7 | 87.2 | 0.98 |
| Among white examinees[a] | 85.3 | 89.9 | 1.05 | 92.5 | 91.8 | 0.99 |
| Among black examinees | 40.4 | 39.1 | 0.97 | 63.3 | 55.8 | 0.88 |

[a]Includes all examinees not classified as black.

Sources: Office of the Surgeon General, United States Army, Supplement to Health of the Army: Results of the Examination of Youths for Military Service, 1965 (July, 1966),p.15; Supplement to Health of the Army: Results of the Examination of Youths for Military Service 1965 (Complementary Analysis) (September, 1966), pp.5,7; Supplement to Health of the Army: Results of the Examination of Youths for Military Service, 1968 (June, 1969), pp. 39, 40, 45, 47, 49. These sources give percentages failing to meet mental requirements; the figures in the table were arrived at by subtracting those percentages from 100. The N.J./U.S. ratios were calculated from the results for purposes of this table.

It indicates that, while the qualification rate for New Jersey youths increased somewhat over the three-year period, the increase was less than that for the entire country, so that by 1968, New Jersey youths qualified slightly less often than did American youths as a whole. Black examinees qualified at a far lower rate than white examinees in both years, in the state and in the nation, and lost even more ground in New Jersey, relative to members of the same racial group, than did white examinees between 1965 and 1968.

The objection may be made that the AFQT is still a test and therefore does not meet the criteria of an indicator. However, it is a test given outside of school, and it does have important "real-life" consequences. But there are a number of other, more serious objections. The most obvious of these is that the measure is applied only to males. (It is applied only to young males, too, but that could be regarded as an advantage, since it is thereby more directly reflective of the system of elementary and secondary education.) Secondly, the number and kinds of men who take the test, and the qualifying level that is set each year, depend upon legislation, the rules governing exemptions, trends in voluntary enlistments, the needs of the armed forces relative to the number of men in the eligible age group, and even attitudes toward service in the armed forces--all of which change from year to year in ways that are largely or wholly extraneous to the educational system.[3] Thus, the changes in the indicator

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[3]For a history of some of these changes between 1963 and 1966, see Office of the Surgeon General, 1967, pp. 10-11.

may not be a result of anything the schools are doing. Finally, if conscription is replaced by an all-volunteer armed force, as seems likely in the near future, the measure will not be repeatable. Though these objections appear to be specific to this particular indicator, they illustrate a general problem with EGI's: Their magnitude is subject to variations stemming from changing social policies and social conditions, variations which may have far greater effects than the work of the schools.

Another measure that has been suggested as an indicator of mastery of basic skills is the proportion of people who pass the written part of the test for a driver's license among all those who take the written test. This is again a test-based indicator, though it, too, has more than purely academic consequences, and it is taken by males and females alike over a wide range of ages. In the 1971-72 fiscal year, the proportion in New Jersey was 77.1 percent.[4]

This would be a valid indicator of basic skills only on the assumption that the ability to pass the test depends primarily on the ability to read and understand the written questions. Actually, of course, it depends at least as much on one's knowledge of the rules of the road. Such knowledge might be regarded as a "basic skill" in a society as heavily reliant upon the automobile as ours is, but the wording of the goal statement makes it seem unlikely that this was intended. Furthermore, it has been pointed out

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[4]Data kindly provided by the Division of Motor Vehicles. Neither comparable figures for previous years, nor figures for the United States as a whole, are readily available. In the 1968 calendar year, 41 percent of license applicants were more than 25 years old.

that, precisely because of the pervasive importance of having a driver's license, states are probably rather lenient in issuing them, so that passing the test may not be a truly valid measure of any skill at all (Hahn, 1970, p. 96). At the very least, it must be said that the proportion passing is influenced by varying enforcement policies. On the other hand, there may well be many people so doubtful of their ability to pass the written test--or perhaps the vision or driving parts--that they do not even take it, so that their scores never enter into the figures. It should also be noted that 25 percent of those who passed New Jersey's written test in 1971-72 took it in a language other than English.

Still another test-based measure that might be thought of as an EGI is the mean score achieved by students taking the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board. Table 2 gives the data for 1968-69, but once more, the figures are much less meaningful than they might appear to be. Like the driver's test, the SAT is taken by a self-selected group. Even to label the scores as being those for the "United States" and for "New Jersey" is misleading, since the test-takers are by no means--though they are sometimes thought to be--the total twelfth-grade student body; the 59,000 New Jersey students who appear in Table 2, for example, represent only 60 percent of the 99,000 young people who graduated from the state's public and non-public secondary schools in June, 1969. Nor are they a random sample, for the test is, of course, taken mostly if not exclusively by students planning to attend college. Thus, mean SAT

TABLE 2. MEAN SCORES OF HIGH SCHOOL SENIORS
ON THE SCHOLASTIC APTITUDE TEST, 1968-69

| | Boys | | Girls | |
|---|---|---|---|---|
| | U.S. | N.J. | U.S. | N.J. |
| Number taking the test | 496,823 | 32,281 | 414,845 | 26,763 |
| Mean SAT-Verbal score | 458 | 457 | 464 | 469 |
| Mean SAT-Mathematical score | 510 | 502 | 466 | 464 |

Sources: For the U.S., College Board Score Reports: A guide for counsellors and admissions officers (College Entrance Examination Board, 1969), p. 24. Data for N.J. were provided by, and are printed with the permission of, the College Entrance Examination Board.

score levels are heavily influenced by rates of persistence in high school, distributions of aspirations for college, the kinds of colleges applied to, and the number and kinds of colleges requiring the SAT for admission--and these factors vary, in complex and largely unknown ways, from state to state and from year to year. (The changes may be especially great in New Jersey over the next few years, with the rapid increase of enrollments in the state's higher educational system.) Certainly it is unlikely, then, that differences between state and nation as small as those shown in Table 2 will be much affected by improvements in the quality of formal instruction. Moreover, the SAT is a much more "purely academic" instrument than either of the other two tests discussed above; and the very use of the SAT score as an indicator might convey the impression that entrance into college is a desirable educational goal in and of itself. On all of these grounds, SAT scores are a particularly poor candidate for an EGI. (For further discussion of the use of test scores for indicator purposes, see Schrader, 1968.)

Another possible basic-skills indicator that was considered was the number of errors of calculation made on income-tax returns per 100,000 returns filed by New Jersey residents. The usefulness of such a measure would be diminished by changes in the tax-return forms (which might affect the comprehensibility of the instructions), and by the facts that many residents do not file returns (their number and characteristics varying with the tax laws) and that some of those who do file returns do not prepare them themselves. In any case, the requisite data for this indicator are not presently available; indeed, the Internal Revenue Service does not

even compile such information, though this difficulty might be overcome if New Jersey should enact its own income-tax law.

Perhaps the most promising indicators in the basic-skills area come from the ORC survey. As part of the survey, respondents were given a list of 65 activities and asked whether they engaged in them "frequently or regularly," "occasionally or every now and then," "rarely or only once or twice," or "never." These activities were specifically designed as potential EGI's. The ones intended primarily as basic-skills indicators are listed in Table 3, together with the percentages saying they engaged in them "frequently or regularly" among respondents who were 16-29 years old (and so had completed their normal education relatively recently) and those who were 30 years old or more. It is interesting to note that, despite substantial differences between these two categories on some of the items, the averages for all the items together were almost the same. The capability for averaging items, since the response format for all is the same,[5] and the capability for making distinctions along such dimensions as age, sex, racial/ethnic group, length of attendance in the state's schools, etc., are among the advantages of this type of indicator.[6]

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[5]For other items in the ORC survey that were not primarily intended as basic-skills indicators but could be included among them, see Table 5, items 5 and 6; Table 6, items 6,8, and 9; Table 8, items 10 and 11; Table 11, item 2; and Table 14, all items.

[6]ORC's own report of the survey classifies respondents on the indicator items into those who had attended New Jersey public schools for six years or less and those who had attended them for more than six years ("Goals for Elementary and Secondary Schools in New Jersey," pp. 93-108). On the whole, the differences were rather small.

The items in Table 3 may appear to be inadequate for EGI's because they are measures of frequency rather than of effectiveness. They tell us, for example, how often people look up a number in the telephone book, but not how long it takes them, how easy they find it to be, or whether they locate the correct number. However, it seems not an unreasonable assumption that frequency and effectiveness are related: the longer it takes a person to find a number in the telephone book, the harder it is for him, and the less often he locates the right number, the less frequently he is apt to make the effort at all, turning instead to another person, or to directory assistance, to find the number for him.

## Outcome Goal II

> The public schools of New Jersey should help every person in the state to acquire a stock of basic information concerning the principles of the physical, biological, and social sciences, the historical record of human achievements and failures, and current social issues.

It is difficult to imagine any EGI's for this goal other than those that could be obtained from questions directed to a sample of the population specifically for indicator purposes, to learn just what information they have. Even at that, a single survey could not cover more than a small part of the range of knowledge implied in the goal statement. However, groups of experts in each field might be able to agree on a set of items that would "represent" the vital information in that field; then, by confining the survey in any one year to a few fields, and perhaps also by using item-sampling techniques, it might be feasible to measure the extent

TABLE 3. POTENTIAL INDICATORS FOR OUTCOME GOAL I FROM THE ORC SURVEY

| | Among respondents whose age was: | |
|---|---|---|
| | 16-29 years | 30 years or more |
| Percent who "frequently or regularly": | | |
| 1. Discuss their point of view with others who hold different opinions | 63 | 46 |
| 2. Balance their checkbook | 30 | 50 |
| 3. Look up someone's number in the telephone book | 43 | 41 |
| 4. Find out how to get somewhere by looking at a map | 35 | 41 |
| 5. Use a dictionary | 29 | 37 |
| 6. Use an encyclopedia | 30 | 26 |
| Mean | 38 | 40 |

Source: Computer printouts provided by Opinion Research Corporation.

of possession of a "stock of basic information" over a four- or five-year period. This is essentially the procedure used by the National Assessment of Educational Progress (Womer, 1970), and its work would be a valuable model.

The ORC survey asked a number of questions dealing with respondents' activities aimed at acquiring information, which will be discussed below under Outcome Goal XI. It may be pointed out here that they do not reveal what was actually learned in these activities, but inducing people to seek information is one way of helping them to acquire it, so the frequency of engaging in such activities can properly be regarded as an indicator for Outcome Goal II. A few ORC questions did tap specific items of information about politics and health, and the results will be given under Outcome Goals III and VII, respectively.

Outcome Goal III

> The public schools of New Jersey should help every person in the state to become an effective and responsible contributor to the decision-making processes of the political and other institutions of the community, state, country, and world.

The most obvious indicator for this goal is voting behavior, but it is by no means as simple a measure as it might seem. For one thing, registration is a necessary prerequisite to voting; not only does this raise the question of whether the base for determining the proportion voting should be the total population of voting age or only the number of registered voters, but it also suggests that the proportion of the voting-age population which is registered to vote might be considered as an

indicator in its own right. Furthermore, eligibility to register and vote depends upon such "extraneous" matters as age and residence requirements; the former was changed only recently and the latter are changing now and also vary among the states (thereby affecting comparisons between New Jersey and the rest of the country). Finally, there is the problem of selecting indicators from among the votes for a host of elective offices and referendum questions. Table 4 shows that, considering only the votes in general elections for president, governor, and senator, and on two referenda, the magnitude of potential voting-behavior indicators for New Jersey ranged from 42 percent to 87 percent in three recent years.[7]

The proportion of registered voters who vote for president, and perhaps even for a state-wide office such as governor or senator, is probably already too high to serve as a useful indicator of educational progress. It is more likely that the percentage of the voting-age population that voted can be increased, and this also has the virtue of reflecting both the proportion who register and the proportion of registrants who vote--although, by the same token, it also incorporates the uncertainties associated with eligibility requirements. In addition to votes for president and state-wide offices, some lower-level offices might be used as well: Congressional representatives would seem to be most suitable, because they are elected in all districts at the same time.

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[7]Voting in primary elections is probably not an acceptable indicator, because it demands the declaration of a party affiliation, which might not be universally regarded as a civic obligation.

TABLE 4. REGISTRATION AND VOTING IN THE UNITED STATES AND NEW JERSEY, 1968, 1969, AND 1972

| | 1968 | | 1969 | | 1972 | | | |
|---|---|---|---|---|---|---|---|---|
| | U.S. | N.J. | N.J. | | U.S. | N.J. | | |
| Total population of voting age (in millions) | 118.5 | 4.4 | 4.4 | | 139.6 | 5.0 | | |
| Percent of voting-age population registered | 69 | 74 | 73 | | 68 | 73 | | |
| | President | President | Governor | Conservation bond issue | President | President | Senator | Transportation bond issue |
| Percent of registered voters who voted | 89 | 87 | 73 | 58 | 80 | 84 | 82 | 65 |
| Percent of voting-age population that voted | 62 | 66 | 53 | 42 | 54 | 62 | 60 | 47 |

Sources for United States: U.S. Bureau of the Census, Statistical Abstract of the United States: 1971 (Washington: Government Printing Office, 1971), pp. 349,364; New York Times, Nov. 2, 1972, p. 35; Facts on File, November 5-11, 1972, p. 882.

Sources for New Jersey: New Jersey Economic Review, Vol. XI, Special Supplement, "1969 Population Estimates for New Jersey"; [Office of the Secretary of State of New Jersey], "Results of the General Election Held November 4, 1969," pp. 2,3,10; U.S. Bureau of the Census, "Characteristics of New Voters: 1972," Current Population Reports, Series P-20, No. 230 (Washington: Government Printing Office, 1972), p. 11; [Office of the Secretary of State of New Jersey], "Minutes of the Meeting of the Board of State Canvassers, December 5, 1972," p. 83; and data provided by Bureau of Research and Statistics, Division of Economic Development, New Jersey Department of Conservation and Economic Development.

The use of referendum questions is more dubious, since these do not appear on the ballot with any regularity and, when more than one is presented, it might be difficult to agree on which one is to be the indicator. However, an arbitrary choice could be made, such as the question that appears in the uppermost or lowermost position on the ballot. The objection might be raised that some questions draw more public attention than others, but it is precisely that kind of difference that the goal suggests should be overcome. The same can be said of votes for Congressional representatives in presidential and non-presidential years.

It has been pointed out previously that an "effective and responsible" contribution to political decision-making processes involves a great deal more than voting. Most people would probably feel, for example, that the good citizen is well informed about political matters. The ORC survey asked respondents if they could name the governor of New Jersey and its two senators--a minimal sort of political knowledge. The percentages who were able to give the correct names are shown in part A of Table 5. While the great majority knew who the governor was, less than a majority could name either of the two senators, and of this group, only about half could name both. Older people were a little better informed than younger people were by this measure.

Part B of Table 5 shows the percentages of respondents in the survey who said they "frequently or regularly" engaged in a number of activities that are related to Outcome Goal III. Although some of the activities, such as giving money to a church or charity and doing volunteer work for a civic or social organization, might not be thought of as contributions to decision-making processes in a strict interpretation of that term,

TABLE 5. POTENTIAL INDICATORS FOR OUTCOME GOAL III FROM THE ORC SURVEY

| | Among respondents whose age was: | |
|---|---|---|
| | 16-29 years | 30 years or more |
| A. Percent who could name: | | |
| 1. The governor of New Jersey | 79 | 86 |
| 2. One New Jersey senator | 17 | 21 |
| 3. Both New Jersey senators | 17 | 27 |
| B. Percent who "frequently or regularly": | | |
| 4. Contribute money or time to help someone get elected to public office | 6 | 8 |
| 5. Send a message of support or protest to an elected public official | 3 | 5 |
| 6. Write a letter to an editor of a newspaper or magazine expressing an opinion | 2 | 3 |
| 7. Attend a local school board meeting | 8 | 6 |
| 8. Serve as an officer of a political or social organization | 9 | 12 |
| 9. Contribute to a church or charity | 35 | 68 |
| 10. Do volunteer work for a civic or social organization | 12 | 17 |
| 11. Give blood | 2 | 5 |
| 12. Pick up litter on the street | 20 | 31 |
| 13. Return glass, metal containers, or newspapers so that they could be re-cycled or used again | 15 | 21 |
| Mean of items 4-13 | 11 | 18 |

Source: Computer printouts provided by Opinion Research Corporation

they have been included here because they seem to represent the "responsibility" of the citizen to do those things that allow the institutions of his community and society to function. (The omission of any indicators of "world citizenship" is notable, and one would be hard put to invent them.) The last three activities in the table--giving blood, picking up litter, and re-cycling materials--may be regarded as extensions of this concept of responsibility, but perhaps they are too far removed from the intent of the goal to be suitable indicators.

It is possible to suggest measures for some of these activities that would not rely on a survey; for example, elected officials could be asked to report the number of letters they receive expressing opinions on political issues. This might be considered a more accurate measure than responses to a survey question--although the survey figures do not indicate any great exaggeration of frequency; on the other hand, some officials might object to tabulating or reporting this kind of information.

Outcome Goal IV

> The public schools of New Jersey should help every person in the state to acquire the knowledge, skills, and understandings that permit him/her to play a satisfying and responsible role as both producer and consumer.

It is surprising that no indicators could be found in published sources which might be suitable for measuring the extent of attainment of the "producer" part of this goal, even though statistics on employment are so abundant. The usual employment figures, however, are actually not very helpful. The proportion of the labor force which is unemployed, for

example, depends overwhelmingly on economic rather than on educational conditions.[8] It could be argued that the intent of this goal is that education should equip every person either with employable skills or with the ability to acquire employable skills, no matter what the economic conditions; but this implies that the proper indicator would be the proportion of the labor force which is unemployed because of a lack of appropriate skills, and such a classification would be difficult to establish. The proportions of the labor force employed in different occupations are similarly affected primarily by economic (and technological) conditions; moreover, Outcome Goal IV is presumably not meant to suggest that particular proportions should be engaged in particular occupations.

More pertinent measures might be the percentage of applicants who attain a qualifying level on civil-service examinations or who are successful in applying for occupational licenses where these are required. Data of this kind could not be located, and it must be pointed out that they would, once again, be test-based indicators derived from the performance of self-selected groups.

None of these data would, in any event, reveal whether individuals were either satisfied or responsible in their roles as producers, and it is those attributes which are the main emphasis of the goal. For such information, as well as for indicators of the same attributes among consumers, survey questions appear to offer the greatest promise. The

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[8] There are technical difficulties with the figure as well. To mention but one, some people have withdrawn from the labor force only because they have decided that they cannot find a suitable job.

ORC survey contained several possibilities, which are displayed in Table 6. Most of the producer-role items probably reflect a combination of satisfaction and responsibility; it may be assumed, for example, that the person who puts in extra hours at work feels a sense of obligation to his job yet would be less likely to do it if he didn't enjoy his work as well (though it must also be recognized that the opportunity for putting in extra hours depends to some extent on economic conditions). Recommending one's place of work to someone else, on the other hand, is chiefly an index of satisfaction. If it were considered important to distinguish more sharply between these two aspects of work, future surveys could include a straightforward question about job satisfaction, while employers or supervisors could be asked about the degree of responsibility shown by persons in their charge.[9]

The consumer-role items in Table 6 are chiefly measures of responsibility, although it may well be that the person who regularly engages in the activities shown is also a more satisfied consumer. (Item 13 in

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[9] In a separate part of the ORC survey, 114 "supervisors or evaluators of employees" were asked for comments about their experiences with the graduates of New Jersey public schools. This was not a representative sample, and the results cannot be precisely quantified; nevertheless, it is worth mentioning that the survey report noted there were "many complaints about the fact that people are not sufficiently motivated on the job, that they are too demanding and are not interested in learning or putting in a full day's work" ("Goals for Elementary and Secondary Public Schools in New Jersey," p. 57).

TABLE 6. POTENTIAL INDICATORS FOR OUTCOME GOAL IV FROM THE ORC SURVEY

| | Among respondents whose age was: | |
|---|---|---|
| | 16-29 years | 30 years or more |
| A. Producer roles: Percent who "frequently or regularly": | | |
| 1. Put in extra hours at work | 35 | 32 |
| 2. Make a suggestion for improving procedures at work | 27 | 30 |
| 3. Develop or learn new job skills | 34 | 20 |
| 4. Recommend tneir place of work to someone looking for a job similar to theirs | 24 | 13 |
| 5. Receive a job promotion | 6 | 7 |
| Mean | 25 | 20 |
| B. Consumer roles: Percent who "frequently or regularly": | | |
| 6. Compare prices when grocery shopping | 42 | 58 |
| 7. Compare the advantages of different brands or manufacturers when making a large purchase, such as a car, T.V., or washing machine | 50 | 55 |
| 8. Consider the extra cost of borrowing money or using an installment plan when making a purchase | 35 | 36 |
| 9. Read any specialized consumer publication, such as Consumer Reports | 16 | 20 |
| Mean | 36 | 42 |

Source: Computer printouts provided by Opinion Research Corporation

Table 5, concerning re-cycling of materials, can be considered another indicator of consumer responsibility.) A question that might get at consumer satisfaction more clearly would be how often "you have made a major purchase that you were later sorry about." Unlike the other indicators that have been discussed, goal attainment on this one would be measured by the decrease in the percentage saying that this happened "frequently."

Outcome Goal V

> The public schools of New Jersey should help every person in the state to acquire the ability to form satisfying and responsible relationships with a wide range of other people, including but not limited to those with social and cultural characteristics different from his/her own.

The principal thrust of this goal is undoubtedly in the area of relationships between members of different racial groups. Consequently, one indicator that immediately suggests itself is the degree of residential segregation of the races, on the premise that segregation declines as people find greater satisfaction (or at least less dissatisfaction) in having persons of other races as their neighbors. Using the block data reported in the U.S. Census, Taeuber and Taeuber have developed an index of residential segregation for cities which is essentially "the minimum percentage of nonwhites who would have to change the block on which they live in order to produce an unsegregated distribution--one in which the percentage of nonwhites living on each block is the same

throughout the city" (Taeuber and Taeuber, 1965, p. 30).[10] Thus, the value of the index can vary from 0, which would be the case if the percentage of nonwhites were already the same on every block in the city, to 100, which would be the case if every block in the city contained only whites or only nonwhites. Taeuber and Taeuber have calculated the values of this index for 109 cities for which the necessary information was available in 1940, 1950, and 1960 and which had 1,000 or more dwelling units with a nonwhite head of household in 1940, and for another 98 cities for which information was available only for 1960.

Portions of their results, including all the New Jersey cities for which the value of the index could be determined,[11] are presented in Table 7. It shows that New Jersey cities were a little less segregated than those elsewhere, whether the comparison is with all cities or only with those in the Northeast or in the Middle Atlantic states; but

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[10] Blacks constitute more than 90 percent of those classified by the Census as "nonwhite"; most of the rest are Oriental. Among those classified as "white" are, of course, many different ethnic groups, including those of Spanish-speaking background.

[11] Taeuber and Taeuber report values only for those cities for which block data were published by the Census. The same kind of index can be computed by using larger units, such as census tracts, though its values are not comparable to those based on blocks.

TABLE 7. INDICES OF RESIDENTIAL SEGREGATION BETWEEN WHITES AND NONWHITES, 1940, 1950, AND 1960

| | 1940 | 1950 | 1960 |
|---|---|---|---|
| Mean for all 109 cities for which data were available | 85.2 | 87.3 | 86.1 |
| Mean for 25 cities in the Northeast | 83.2 | 83.6 | 78.9 |
| Mean for 18 cities in the Middle Atlantic states | 83.7 | 84.3 | 80.0 |
| New Jersey cities | | | |
| Atlantic City | 94.6 | 94.0 | 89.2 |
| Camden | 87.6 | 89.6 | 76.5 |
| East Orange | 85.3 | 83.7 | 71.2 |
| Elizabeth | 75.9 | 76.1 | 75.2 |
| Englewood | - | - | 87.9 |
| Jersey City | 79.5 | 80.5 | 77.9 |
| Montclair | - | - | 80.3 |
| Newark | 77.4 | 76.9 | 71.6 |
| Passaic | - | - | 71.8 |
| Paterson | 79.8 | 80.0 | 75.9 |
| Trenton | 81.9 | 83.0 | 79.6 |
| Mean for New Jersey cities | 82.8 | 83.0 | 77.9 |

Source: Karl E. Taeuber and Alma F. Taeuber, Negroes in Cities: Residential Segregation and Neighborhood Change (Chicago: Aldine, 1965), pp. 32-34, 39-41, 44.

that they followed the same trend as other cities did--a slight increase in segregation from 1940 to 1950, and a small decrease between 1950 and 1960. It also shows that New Jersey cities, like those elsewhere, were far closer to the completely segregated than to the completely unsegregated value of the index, so there is plenty of room for movement toward the goal (which here again would be demonstrated by a decline in the indicator). However, it would probably be unrealistic to expect large changes to occur in the near future; between 1950 and 1960, the average value for New Jersey cities dropped by only about half a point per year.

An indicator of residential segregation is admittedly influenced by a major economic factor, the generally lower income of nonwhite families. One way of getting around this would be to develop a similar index of segregation in the schools. A community in which there were satisfying and responsible relationships between the races would presumably wish to desegregate its schools, and it could do so without regard to the incomes of students' families. There might be extra costs involved, as in transporting students, but the willingness to pay these costs would be a sign that the goal was being reached.

More direct indicators of the ability alluded to in Outcome Goal V are found in the responses to several questions asked in the ORC survey. Some of these--see items 4-7 and, in part, item 3 of Table 8--refer to differences other than racial ones. But the relationships called for in the goal are expressly "not limited to" people who differ from

TABLE 8. POTENTIAL INDICATORS FOR OUTCOME GOAL V FROM THE ORC SURVEY

| | Among respondents whose age was: | |
|---|---|---|
| | 16-29 years | 30 years or more |
| Percent who "frequently or regularly": | | |
| 1. Come into contact with members of other racial groups in church, at meetings, in recreational activities, etc. | 34 | 26 |
| 2. Attend a social gathering where there are members of other races | 33 | 16 |
| 3. Speak up for members of other racial or ethnic groups | 31 | 20 |
| 4. Listen to someone who had different ideas explain his ideas to them | 61 | 51 |
| 5. Try to learn about people whose background and way of life is different from their own | 35 | 24 |
| 6. Come into contact with people whose social and cultural characteristics are different from their own in church, at meetings, in recreational activities, etc. | 34 | 27 |
| 7. Attend a social gathering where there are people whose social and cultural characteristics are different from their own | 32 | 17 |
| 8. Lend something to a friend or neighbor | 67 | 51 |
| 9. Have friends over to their house or apartment | 66 | 55 |
| 10. Help a friend solve a problem | 59 | 43 |
| 11. Help someone who is in trouble | 47 | 43 |
| 12. Welcome someone who has just moved into the neighborhood | 22 | 32 |
| Mean of items 1-3 | 33 | 21 |
| Mean of items 3-7 | 39 | 28 |
| Mean of items 8-12 | 52 | 45 |

Source: Computer printouts provided by Opinion Research Corporation.

oneself, so it is especially noteworthy that some of the items (8-12) refer to general social relationships apart from racial, social, or cultural differences. EGI's for this aspect of the goal would be very difficult to obtain except through a survey, and the figures in Table 8 suggest that progress toward its achievement is much greater than toward those aspects involving racial, social, or cultural differences, so that it would be desirable to have separate measures. The higher percentages shown by the young on nearly every item are quite striking, though one must be cautious in attributing them to the recency of schooling alone; many other factors may be at work, including the often-noted cultural gap between the generations (which itself, however, may be partly due to education). Insofar as civic, work, and family responsibilities also involve relationships with other persons, some of the indicators for Outcome Goals III, IV, and VI could be used for Outcome Goal V as well.

## Outcome Goal VI

> The public schools of New Jersey should help every person in the state to acquire the capacities for playing satisfying and responsible roles in family life.

An EGI that many people would think of in connection with this goal is the divorce rate--the higher the number of New Jersey citizens who are divorced (relative to some base number), the less often it would be

presumed they have learned to play "satisfying and responsible roles in family life." Actually, a divorce rate, in the strict sense of the term, is not a useful indicator for a state. In its most acceptable form, it is expressed as the number of divorces granted in a year relative to the number of ever-married couples for that year. While this rate is meaningful for the country as a whole, it cannot be applied to a single state such as New Jersey because many, if not most, of its residents who obtain divorces do so in other states.[12] However, a divorce ratio could be calculated for a single state and would accomplish much the same purpose. This ratio is the number of divorced persons of either sex resident in the state in a given year relative to the number of ever-married persons of that sex resident in the state in the same year. The ratios for New Jersey and the United States in 1950 and 1960 are given in Table 9.

So many qualifications must be made about even these figures that their usefulness as indicators is cast into serious doubt. Divorce is becoming increasingly acceptable to public opinion, so that (among other things) the legal restrictions on it are being relaxed; consequently, a rise in

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[12]Data on the reported state of residence of persons seeking divorces in all states would not be helpful--even if they were available--since a person is generally required to establish a (temporary) residence in a state in order to qualify for a divorce there.

TABLE 9. DIVORCE RATIOS FOR THE UNITED STATES AND NEW JERSEY, 1950 AND 1960

| | 1950 | | 1960 | |
|---|---|---|---|---|
| | U.S. | N.J. | U.S. | N.J. |
| Males | | | | |
| Number ever married (in thousands) | 40201.3 | 1364.1 | 45795.6 | 1641.7 |
| Number divorced (in thousands) | 1071.4 | 21.6 | 1289.1 | 25.5 |
| Divorce ratio (number divorced per thousand ever married) | 26.6 | 15.9 | 28.1 | 15.5 |
| Females | | | | |
| Member ever married (in thousands) | 45684.0 | 1562.4 | 52439.4 | 1893.8 |
| Member divorced (in thousands) | 1372.9 | 29.8 | 1847.4 | 41.8 |
| Divorce ratio (number divorced per thousand ever married) | 30.0 | 19.1 | 35.2 | 22.1 |

Source: U.S. Bureau of the Census, U.S. Census of Population: 1960. Detailed Characteristics. United States Summary. Final Report PC (1)-1D (Washington: Government Printing Office, 1963), p. 436; U.S. Bureau of the Census, U.S. Census of Population: 1960. Detailed Characteristics. New Jersey. Final Report PC (1)-32D (Washington: Government Printing Office, 1962), pp. 381, 383.

the number of divorces may occur without signifying a corresponding rise in the number of marriages involving dissatisfied or irresponsible spouses. Indeed, divorce may itself be a highly responsible act in some circumstances--for example, where it is to the benefit of the children of an unhappy marriage; to the extent that this is true, a rising divorce ratio could even indicate more rather than less responsible performance of family roles.[13] At the same time, there are many people, especially in some religious groups, for whom divorce continues to be unacceptable and who would not resort to it even if they felt their spouse was irresponsible or they were dissatisfied with their marriage for some other reason. Nor does the indicator take any account of single persons, some of whom may be single precisely because they have characteristics which have prevented them from becoming responsible partners in a satisfying marriage.

There is another objection which is specific to the use of this indicator for purposes of measuring the attainment of <u>educational</u> goals. In most of the goal areas, education can properly be regarded as a life-long process,

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[13]There are also complicated problems arising from the frequency of, and trends in, re-marriage after divorce. Divorced persons who re-marry--and the great majority of them do--occupy an ambiguous position with respect to Outcome Goal VI. If they are re-married at the time of enumeration, they are of course included in the number of married persons but not in the number of divorced persons.

and the state's educational system can be held accountable for remedying deficiencies in elementary or secondary schooling, wherever it took place, by providing adult education. But divorce is an event that, having occurred, cannot be "remedied" by later education. The divorce ratio therefore cannot be interpreted as an EGI for New Jersey without knowing how many people have moved into the state after having been divorced (and educated) elsewhere, and such information is not available. Conversely, there is no way of knowing how many people have been educated in New Jersey and have been divorced but now reside in some other state. It would be hazardous to assume that this in-migration and out-migration are neatly balanced.

Another potential EGI for Outcome Goal VI, emphasizing the "responsibility" part of it, is the rate of illegitimate births (number of illegitimate births in a year per 1,000 live births in that year).[14] Data for New Jersey and the United States are presented in Table 10. An especially noteworthy point about this table is the sharp rise in the ratio that occurred between 1960 and 1966, both in the state and in the nation as a whole. So great is

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[14] Some current commentary would suggest that a reduction in the birth rate itself--the number of live births per year per 1,000 women of childbearing age--is a sign of increasing parental responsibility. The controversy that would be aroused by the proposal to use this rate as an EGI is obvious.

TABLE 10. RATES OF ILLEGITIMATE BIRTHS IN NEW JERSEY AND THE UNITED STATES BY AGE, 1954, 1960, AND 1966

| Number of illegitimate births per 1,000 live births among women whose age was: | 1954 | | 1960 | | 1966 | |
|---|---|---|---|---|---|---|
| | U.S. | N.J. | U.S. | N.J. | U.S. | N.J. |
| Less than 15 | 539 | 841 | 530 | 764 | 763 | 910 |
| 15-19 | 114 | 154 | 110 | 164 | 219 | 272 |
| 20-24 | 33 | 31 | 34 | 41 | 71 | 69 |
| 25-29 | 18 | 10 | 21 | 17 | 41 | 30 |
| 30-34 | 16 | 8 | 19 | 12 | 38 | 24 |
| 35 or more | 18 | 9 | 21 | 12 | 42 | 20 |
| Total, all ages | 34 | 24 | 38 | 36 | 84 | 72 |

this increase that it is almost certainly due not to any actual change in the ratio but rather to something having to do with the reporting of the number of illegitimate births. It is true that the number of illegitimate births reported has risen with the increasing proportion of births which take place in hospitals which is just (one of the extraneous factors affecting the ratio), but the magnitude of this change is too great to be accounted for by that. Efforts to ascertain what else may have been involved were unsuccessful, so the table must stand as a warning against hasty interpretation of such figures and particularly against attributing changes in them to changes in the educational system.[15]

ORC survey indicators for this goal are listed in Table 11. What is most attractive about these items is that they are equally applicable to any family member, regardless of sex or age (except for the very youngest, who are not relevant to EGI's, anyway).

Outcome Goal VII

> The public schools of New Jersey should help every person in the state to acquire the knowledge, habits, and attitudes that promote personal and public health, both physical and emotional.

In the case of health, as in that of employment, a wealth of statistics conceals a paucity of measures that would be useful for EGI's. There is no space here to go into all the complex reasons for this (for an excellent discussion, see Moriyama, 1968), but briefly, the indexes of

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[15] It should also be pointed out that the high ratios in the under-15 age bracket are due not to a large number of illegitimate births--the number is actually much smaller than in any other age group--but rather to the infrequency of marriage among women of that age.

TABLE 11. POTENTIAL INDICATORS FOR OUTCOME GOAL VI FROM THE ORC SURVEY

| | Among respondents whose age was: | |
|---|---|---|
| | 16-29 years | 30 years or more |
| Percent who "frequently or regularly": | | |
| 1. Celebrate an anniversary or birthday with a member of their family | 72 | 77 |
| 2. Help a member of their family solve a problem | 52 | 63 |
| 3. Make plans to do something with other members of their family | 50 | 65 |
| 4. Keep in touch with a relative who lives away from home | 45 | 63 |
| 5. Do something their family wants them to do which they wouldn't otherwise do | 40 | 38 |
| Mean | 52 | 61 |

mortality, life expectancy, illness, and injury are such that they are very unlikely to be noticeably affected by improvements in the quality of education. Any changes that do take place are far more likely to be the results of changes in medical knowledge and technology, hospital facilities, and the cost and accessibility of medical care, or even in housing, or in transportation and communication (which determine the rapidity with which medical help can be obtained).[16]

It might appear that an important possible exception to this generalization would be venereal disease rates. This form of illness is especially prevalent among the young, and (unlike many other common diseases) its rate probably could be substantially reduced by appropriate education. Ironically, however, the principal effect of education for some years might well be to encourage the reporting of cases--so that they could be treated--and thus to produce an apparent rise in the rate, even though the actual rate might be going down.

Traffic accidents, too, may be relatively easily influenced by educational efforts (although they are also affected by technology and practice in highway and automobile construction and traffic control), and they are probably comprehensively reported, particularly where injuries are incurred. The problem with such an indicator is that a considerable proportion of accidents in New Jersey must involve out-of-state drivers, and the proportion varies over time (and among different states). Accidents reports do not at present make this distinction.

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[16] An increased amount of education may bring a person better health, by enabling him to qualify for a higher-income job, with all that that implies (Lee, 1969, pp. 444-446). But EGI's are supposed to measure increases in the quality, not quantity, of education.

The situation is much worse as far as "emotional" or mental health is concerned. There is not even agreement about what constitues mental health or illness. A recent survey of indicators concluded, for this area:

> Because of still unresolved problems of psychiatric diagnosis, and because the types of behavior that are considered manifestations of mental illness change with our culture, no adequate measures of the mental health of a population have been developed. (U.S. Department of Health, Education, and Welfare, [1969], p. 4)

Furthermore, if an indicator were to be devised, a major difficulty in using it as an EGI would arise from the stigma often attached to mental illness, which deters its victims or their relatives from seeking help or even acknowledging the condition. Perhaps the most constructive action that could be taken by the educational system, therefore, would be to change the attitudes that lead to stigmatization--but that would again (as with venereal disease, and for similar reasons) lead to an apparent increase in the rate, at least in the short run.

Turning from personal to public health, one potential and available measure is the proportion of the population served by a fluoridated water supply. The figure was 14.4 percent for New Jersey in 1970 (including both natural and controlled fluoridation), which placed it 43rd among the states. Data obtained from the Office of the Bureau of Dental Health, New Jersey Department of Health. This could be taken as an indicator of "attitudes that promote" public health--but it hardly needs to be pointed out that its validity would be challenged by many people. Measures of the frequency or magnitude of efforts to eliminate various forms of environmental pollution might serve the same purpose with less controversy.

The results of a number of health-relevant questions included in the ORC survey are given in Table 12. Items 1-6 are positive indicators; they show, not surprisingly, that the old tend to take more health precautions than the young. Items 10-12 are also positive; they asked respondents to say whether each of the three menus for a meal was "balanced," the menus having been selected by experts for a similar pool conducted for CBS News. Of the nationally representative sample queried in that poll, an average of 73 percent responded correctly to the three menus--slightly better than the New Jersey sample did.[17]

Item 7-9 were intended to be negative indicators--they would show goal attainment by lower rather than higher values--but they are somewhat problematical. It is hard to know, for example, what a rise in the "frequently" response to item 8 would mean: that respondents are more frequently sick (and that the health of the population is therefore declining), or that when respondents are sick, they more frequently stay in bed (and that health habits are therefore improving). One may also question the reliability of a question about the use of hard drugs--although it must be said that other sources of information, such as police or hospital records, would not inspire any greater confidence. Collectively, the three items vividly demonstrate that a simple average of responses may not be justified, even if the response format is the same, because the attitudes or behaviors may be qualitatively different in importance. To

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[17]"Goals for Elementary and Secondary Schools for New Jersey," p. 107.

TABLE 12. POTENTIAL INDICATORS FOR OUTCOME GOAL VII FROM THE ORC SURVEY

| | Among respondents whose age was: | |
|---|---|---|
| | 16-29 years | 30 years or more |
| Percent who "frequently or regularly": | | |
| 1. Stay within the speed limit when driving a car | 41 | 68 |
| 2. Stay home or keep children at home to keep a cold or the flu from spreading to other people | 41 | 56 |
| 3. Use products that help control pollution, such as low-lead gasoline or special detergent | 39 | 45 |
| 4. Go to a doctor for a check-up | 35 | 49 |
| 5. Go to a dentist for a check-up | 38 | 43 |
| 6. Get physical exercise | 53 | 37 |
| 7. Smoke a cigarette | 37 | 32 |
| 8. Are sick enough to stay in bed | 6 | 6 |
| 9. Use hard drugs, such as heroin | * | * |
| Percent who correctly distinguished between balanced and imbalance meals: | | |
| 10. Menu A | 82 | 78 |
| 11. Menu B | 71 | 69 |
| 12. Menu C | 53 | 56 |
| Mean of items 1-6 | 41 | 50 |
| Mean of items 7-9 | 14 | 13 |
| Mean of items 10-12 | 69 | 68 |

*Less than 0.5 percent.

Source: Computer printouts provided by Opinion Research Corporation.

cope with that problem, the items could be assigned different weights, derived from a consensus of either expert or public opinion.

Goal Outcome VIII

> The public schools of New Jersey should help every person in the state to acquire the ability and the desire to express himself/herself creatively in one or more of the arts, and to appreciate the esthetic expressions of other people.

The search for indicators in this area was one of the least productive. Five items that were included in the ORC survey are shown in Table 13. They could be supplemented by others, such as frequency of reading a novel, attending a film, or subscribing to a music or art magazine. One serious problem here is whether the quality as well as the quantity of esthetic activities should be taken into account--whether, for example, watching a Bergman film is to be equated with watching a horror production. Related to this is the difficulty of making a distinction between esthetics and entertainment.

Outside of the survey items, the nearest thing to an indicator that could be located was a list, provided by the New Jersey State Arts Council, of "cultural" organizations active in the state in 1967. It contained the names of 37 orchestras, 16 choral and dance groups, 15 opera associations, 8 museums, 6 theaters, and 5 "arts centers." No information was available on their degree of activity, the number of their participants, or the size of their audiences.

The scarcity of data on this important educational and human domain is not peculiar to New Jersey. According to Toffler, who has given close

TABLE 13. POTENTIAL INDICATORS FOR OUTCOME GOAL VIII FROM ORC SURVEY

| | Among respondents whose age was: | |
|---|---|---|
| | 16-29 years | 30 years or more |
| Percent who "frequently or regularly": | | |
| 1. Use their creative abilities in handicrafts, such as sewing, knitting, woodworking, etc. | 41 | 38 |
| 2. Use their creative abilities in such things as painting a picture, writing a story or poem, playing a musical instrument | 32 | 15 |
| 3. Sing in a chorus, perform in a play or concert, etc. | 12 | 5 |
| 4. Attend a play, concert, art exhibit, or other cultural event | 27 | 18 |
| 5. Go to a museum or art gallery | 13 | 10 |
| Mean of items 1-5 | 25 | 17 |

Source: Printouts provided by Opinion Research Corporation.

consideration to measurement of the arts, "it is safe to say that in no other significant field is the existing data base flimsier" (1969, p. 267). Indeed, as he also points out, "The very idea of measuring the arts is abhorrent to many" (Toffler, 1969, p. 263). He has himself made a bold and provocative set of proposals for the establishment of a "cultural data system" (Toffler, 1969, pp. 268-277), but they are full of gross defects and probably impossible of realization.

Outcome Goal IX

> The public schools of New Jersey should help every person in the state to acquire an understanding of ethical principles and values and the ability to apply them to his/her own life.

It may well be that attainment in this goal area defies measurement altogether, at least without a clearer specification of exactly which "ethical principles and values" are supposed to be taught in New Jersey's schools. Making some assumptions about that, some of the ORC survey items might qualify as EGI's for Outcome Goal IX--for example, those which seek to tap "responsible" attitudes and behavior in civic, work, and family roles, in relationships with other people, and in health.

The vast domain of crime statistics was investigated for possible EGI's of indicators of ethics, but their shortcomings give one pause. Most such statistics are based on the number of crimes reported to the police, and these are but a small proportion of the number of crimes committed. Consequently, the rates are easily influenced by anything that induces people to report crimes more often than they do now--a well-publicized anti-crime drive, or an increase in police visibility or in the number of crime stories

appearing in the press.[18] Many other extraneous matters enter into the measurements; for example, the single most important factor responsible for the reduction of the homicide rate in the past 50 years has been the improvement in medical care, which has prevented many murderous assaults from resulting in death. This, in turn, raises the question of just which crimes are appropriate indicators of lack of ethical principles; not only do categories of crime vary in seriousness from parking violations to homicide and forcible rape, but there is a great deal of variation within a category as well. (For further discussion of these and related problems, see Glaser, 1969, and Sellin and Wolfgang, 1964.) Perhaps the most significant question is whether crime is to be considered in the context of ethical principles at all, or in the context of vocational skills or family life or relationships with others--if, indeed, it is to be assumed that educational change per se, in the absence of social and economic changes of a much broader kind, could have any effect on crime rates. The etiology

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[18]This problem could be avoided by the use of a rate of crime victimization instead of a rate of crime commission. It would be a survey-type indicator, based on the number of times a sample of respondents say they have been the objects of criminal acts. A survey of this kind has been carried out on a sample of the United States population (Glaser, 1969, p. 419), and the relevant items could be included in future surveys conducted for purposes of collecting EGI data in New Jersey. One limitation of this form of measurement, as Glaser mentions, is that it does not include many crimes of property against private and governmental organizations.

of crime is an exceedingly complex issue. For whatever it is worth, there were 236.1 reported crimes of violence per 100,000 residents in New Jersey in 1968, and 2,201.5 reported crimes against property; the corresponding figures for the entire United States in the same year were 294.6 and 1,940.2 (U.S. Department of Labor, 1970, p. 58).

### Outcome Goal X

> The public schools of New Jersey should help every person in the state to develop an understanding of his/her own worth, abilities, potentialities, and limitations.

None of the ORC survey items were pertinent to this goal, nor were any data located for other suitable indicators of it. Indeed, this may well be the most difficult to measure of all the goals.

Assuming that development of an understanding of one's own worth means that people should come to think well of themselves, to have self-respect or self-esteem, attainment of this part of the goal would be indicated by the prevalence of "positive self-concepts" in the population. But the concept of "self-concept" is extraordinarily elusive. There is not even agreement on definition of the term. As one student of the subject has said, "The research is relatively limited, standardized measures are largely nonexistent, and terminology is obscure" (Bourisseau, 1972, p. 81; for an earlier but more comprehensive review, see Wylie, 1961). Thus, it is probably unreasonable to expect that widely accepted measures of the understanding of one's own worth could be proposed at the present time.

Though the terms seem more clear-cut, measurement of the understanding of one's "abilities, potentialities, and limitations" is not much easier. A basic problem is knowing exactly what is intended by the word "understanding." It may mean nothing more than "knowledge" of the stated qualities, or it may be taken more broadly to mean "appreciation of their significance." The latter interpretation presents a dilemma: To accept a person's own opinion about the significance of his characteristics would be tautologous (everyone would then always understand his own abilities, by definition, and the measure could show no variation over time); yet to accept someone else's judgment of their significance, however that might be arrived at, would entail the assumption that a person appreciates the significance of his own qualities, and in that sense "understands" himself, less well than others do--an assumption that one might properly be reluctant to make.

Equally awkward problems are raised if understanding is to mean only knowledge, thus implying that there are more nearly "objective" facts about himself that a person can and should know. There are, of course, many instruments for making objective assessments of an individual's abilities, potentialities, and limitations, and respondents in a survey might be asked whether they knew their scores on various such tests.[19]

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[19]The responses would reflect such extraneous matters as the frequency with which tests are given--which is rising--as well as varying practices in informing test-takers of their scores. For interesting evidence and observations on these and other issues connected with the measurement of this goal, see Brim and others, 1969, especially pp. 249-269.

There is no assurance, however, that their professed knowledge would be accurate. To get around this, a procedure such as this might be employed: Respondents could be told that they were going to be given, say, a 20-item test of college-level vocabulary and asked how many items they believed they would answer correctly; then the test would be administered, and the respondent's knowledge of this ability would be measured by the difference between his estimated and actual scores. There are, however, a number of technical difficulties in this procedure. Furthermore, the results would be limited to a single ability, and it would probably be too cumbersome to follow a similar procedure for any large number of abilities. There are some abilities--not to mention potentialities and limitations--that could not be measured at all in this way.

An alternative strategy would be to ask a sample of the population simply whether they thought that their abilities were "average," "below average," or "above average" in comparison with some reference group. The abilities could be differentiated into various kinds, and the reference groups might include "the people with whom you work," "most of your friends, "or" the average person in this state" or "in the United States." The presumption here would be that, since most abilities are distributed in a statistically normal fashion, attainment of the goal of "knowledge of abilities" would mean that most people will say they are average and that the proportion who say they are above average will be approximately

equal to the proportion who say they are below average.[20] This eliminates the necessity of determining whether any individual's knowledge of his abilities is correct, but it leads to a peculiar contradiction that illustrates the complexities involved in measurement of this goal. Saying that one's abilities are above average is probably a sign of positive self-concept. An increase in the proportion who give this answer could therefore be taken both as evidence that the goal of understanding one's worth was being achieved and as evidence that the goal of understanding one's abilities was not being achieved!

### Outcome Goal XI

> The public schools of New Jersey should help every person in the state to learn to enjoy the process of learning and to acquire the skills necessary for a lifetime of continuous learning and adaptation to change.

People who enjoy the process of learning and have the skills for it presumably engage in it as a voluntary action more frequently than those

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[20] When a similar question was asked about intelligence in a recent national survey of adults, between 68 and 85 percent of the respondents said they were "the same" as others, depending on the reference group; the proportions saying they were "higher" ranged from 12 to 30 percent and were three to fifteen times as great as the proportions saying they were "lower" (Brim and others, 1969, p. 261).

who do not enjoy it. Consequently, the proportion of the population involved in formal but noncompulsory education might be an EGI for this goal. Slightly more than two-thirds (67 percent) of those who graduated from New Jersey's high schools during the 1968-69 school year were reported to have embarked upon some form of postsecondary formal education the following fall.[21] The great majority of them--almost 85 percent--entered a two-year or four-year college or university, but it would be important not to limit the indicator to that group, in order to avoid the implication that college is the proper form of postsecondary education for all. (Of course, it ought not be assumed that continuing one's education in any form immediately upon graduation from high school is necessarily the "right" thing for everybody, which suggests, as has been pointed out before, that no single indicator is adequate for measuring the attainment of a goal.) This indicator does not take account of those who left high school before graduation; and, as usual, it is subject to extraneous influences--most particularly, in this case, the cost, accessibility, and admissions policies of postsecondary institutions. Some doubt may also be expressed about the "voluntary" nature of postsecondary education. How many students go to college because of parental pressures or felt vocational needs? While people who enjoy learning may engage in it more often than those who do not enjoy it, by

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[21] New Jersey Education, 4 (April, 1970), 4-5. The figure is derived from forms completed by high-school principals on the basis of probably incomplete knowledge.

no means all who are engaged in it are enjoying it.

Another type of formal noncompulsory learning experience are the adult education courses offered by most school districts. In 1967-68, there were 185,196 enrollments in these courses in New Jersey,[22] or 393 per 10,000 adult (18 years old or more) residents of the state. Here, too, there may be some question as to whether these enrollments represent learning for the sake of enjoyment alone--many courses, for example, are clearly oriented toward vocational improvement[23]--but that may be an unnecessarily rigid distinction to make in the case of this kind of case. However, course-by-course figures are available, and classifications by type could be made if that were desired.

Indicators for more informal sorts of learning experiences are considerably less promising. One might suggest the circulation of books

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[22]Data provided by the Bureau of Adult Education of the New Jersey State Department of Education.

[23]In this connection, it should be mentioned that many business firms offer more or less formal training to their employees. No compilation of the numbers participating could be found, but it should not be difficult to collect such data. Note that there is an ORC survey item asking about the learning of new job skills (Table 6, item 3).

by public libraries (nearly 29,000,000 for New Jersey's 355 public libraries in 1968[24]), but school-age children probably contribute heavily to that figure; there are different definitions of "circulation"; and there is no assurance that a book borrowed is a book read (much less learned from or enjoyed). There are similar difficulties, and others as well, with such data as museum attendance and newspaper circulation rates.

Both formal and informal learning experiences were touched on by ORC survey items, which are, moreover, somewhat freer of vocational considerations. One interesting aspect of the responses (Table 14) is that older people seem to prefer briefer or less "demanding" sources of information and knowledge, such as newspapers and television, while younger people--perhaps because they still retain the habits of formal schooling--are apparently more willing to read books and attend courses or lectures. When all the types of learning experiences asked about are weighted equally, however, there is no significant difference by age. These items are not direct evidence of enjoyment any more than the other kinds of indicators are; but where a variety of voluntary activities can be considered together and on the same scale, the principle that higher frequency implies greater enjoyment may be reasonably valid.

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[24]New Jersey State Library, Public and School Library Service Bureau, Public Libraries of New Jersey, Statistics 1968 (Trenton: State Department of Education, 1969, pp. 30,31.

None of the potential indicators that have been discussed for Outcome Goal XI is an adequate measure of whether people have the skills necessary for "adaptation to change." That is a peculiarly ambiguous part of the goal, though. Are New Jersey's citizens to be expected to adapt equally well to all changes--to new production technologies and increased pollution, to population movements and intensified racial conflict, to political campaigning by television and greater restrictions on free speech? Until there is clarification of what kinds of changes are supposed to be adapted to and what kinds resisted--or, to put it differently, what kinds of behavior "adaptation" is intended to mean in what kinds of circumstances--measurement of this part of the goal does not seem possible.

TABLE 14. POTENTIAL INDICATORS FOR OUTCOME GOAL XI FROM ORC SURVEY

| | Among respondents whose age was: | |
|---|---|---|
| | 16-29 years | 30 years or more |
| Percent who "frequently or regularly": | | |
| 1. Spend at least 20 minutes reading a newspaper or newspapers | 56 | 77 |
| 2. Keep informed about current events | 54 | 65 |
| 3. Read magazines or journals to get information, not just for entertainment | 55 | 57 |
| 4. Watch T.V. to get information, not just for entertainment | 45 | 60 |
| 5. Read books | 58 | 49 |
| 6. Expand their knowledge of a subject by talking with other people | 57 | 46 |
| 7. Attend a course or a lecture to further their knowledge | 29 | 14 |
| Mean | 51 | 53 |

Source: Computer printouts provided by Opinion Research Corporation.

## Conclusions

The findings of this search for educational goal indicators suggest that a distinction should be made between two types of indicators, which may be called intentional and incidental. Intentional indicators are those based on data gathered expressly for the purpose of measuring the degree of attainment of educational goals; incidental indicators are those based on data gathered for some other purpose. In the context of this report, intentional indicators are synonymous with the ORC survey items and incidental indicators with all the rest (although, for reasons to be explained below, they should not be called "survey" and "non-survey" indicators).

By compelling the consideration of specific potential indicators for New Jersey's educational goals, the search has also helped to reveal the characteristics of good EGI's. In retrospect, it appears that there are ten such characteristics. A comparison of the advantages and disadvantages of intentional and incidental indicators in their terms will serve to summarize what has been found and should point toward appropriate actions for improving measurement of the attainment of educational goals.

1. A good EGI has an intrinsically meaningful significance.

   This is part of the very definition of an indicator, and properly selected indicators of both types exhibit it equally well.

2. A good EGI retains a constant meaning over a relatively long period of time; and when changing conditions do require a change in its form, such change is accomplished readily, without drastic alteration of meaning.

Repeatedly, it has been found that the relationship of incidental indicators to education outcomes is subject to adrupt change brought about by a new product, or a new law, or the more (or less) rigorous enforcement of an old law. When that happens, the indicators can no longer be used to measure educational progress (though they may still be useful for other purposes, to which they may not be "incidental" at all). Such changes are beyond the control of the educational system. Intentional indicators, on the other hand, can be deliberately designed so as to be broad or generalized enough to reflect an educationally relevant activity in a fairly constant way even when the circumstances surrounding that activity change. Eventually, they, too, may be made obsolete by changing conditions; but even then, if they are based on survey questions, they can be more easily cast into newly useful forms than is the case where data collection depends on a complex institutional reporting network, as is true of many incidental indicators.

3. A good EGI is sensitive to what is happening in education and insensitive to what is happening outside it.

Failure to meet this criterion is one of the major drawbacks of incidental indicators. Almost every one is affected extraneous, non-educational forces that may very well blot out the direct effects of education (Sheldon and Freeman, 1970, pp. 100-101). Intentional indicators are not free of this difficulty; however, because they are specifically designed to measure educational effects, they can come closer to avoiding it. (See also the discussion of characteristic 6.)

4. A good EGI is part of a larger body of data that allows the determination of what a reasonable level of attainment would be for New Jersey.

At first glance, this criterion would seem to mean that there should be comparable data for the United States or for other states or regions separately. If so, incidental indicators would be preferable, since many of them are derived from data gathered for the entire nation. Most of the ORC items were asked for the first time in this survey; there is no reason in principle why they could not be asked elsewhere as well, perhaps by other states for the same purpose, but that would require time and coordinated effort, with uncertain results.

However, a word of caution is in order. Although there has not been space to explore the issue fully in this report, the territorial units with which New Jersey should be compared are by no means self-evident. The attainment of educational goals is inevitably conditioned by non-educational factors, such as degree of urbanization, socioeconomic composition, patterns of transportation and communication, etc. These conditions are not necessarily the same in the nation as a whole, or in particular other states, as they are in this state. Hence, the levels attained elsewhere may be higher, or lower, than those that are reasonable for New Jersey. Comparisons should therefore be made with "comparable" states or regions--but it is not easy to decide which ones those are. The decision may vary from goal to goal, and then the data for the appropriate units may not be available for some incidental indicators. Indeed, in some instances, it may be possible, or even preferable, to set a level of goal attainment in

terms of internal variation within the state--e.g., "the state as a whole should reach, in five years, the level of the county presently at the first quartile." If educational objectives are defined in this way, intentional indicators would generally be superior, since they could be obtained for any desired unit within the state, while the data for incidental indicators are often not available for units smaller than the entire state.

5. A good EGI is one among a set of similar EGI's that allow a reliable estimate to be made of the trend with respect to each goal and that collectively cover all goals.

Because they were devised for a wide variety of purposes, incidental indicators are apt to be so heterogeneous in form as to make it impossible to combine them in any meaningful way; thus, one indicator may imply that the schools are moving in one direction while another indicator suggests the opposite, and there is no way of knowing which one is more nearly correct or of "averaging" their values. Moreover, there are some educationally important domains in which, for various reasons (including the absence of any other institution with sufficiently broad responsibilities or with any responsibility at all), no indicators incidental to education's purposes are in use, or not enough to allow reliable judgments of progress to be made. By contrast, intentional indicators are not constrained by the needs or lack of needs of other institutions; there is virtually no limit to the number of them that can be developed for a given goal; and they can be designed in compatible forms that permit summation and the

calculation of a central tendency for each goal. It is worth noting that these latter two attributes give rise to another advantage: If the number of indicators is large, and if they tap different aspects of the same goal, there is a greater probability that the effects of extraneous forces will be canceled out, and the measure of central tendency will then be a better reflection of educational activities.

There may be some goals for which satisfactory intentional indicators cannot presently be devised, either--although in some cases the problem seems to lie in the ambiguity of the goal statements themselves. Nevertheless, intentional indicators do promise more nearly adequate coverage of each goal and of all goals together than incidental indicators do.

6. A good EGI provides an accurate measure of the goal status of the entire population and of subgroups of special concern.

By virtue of the purposes to which they pertain, incidental indicators are often based on the performance or actions of more or less self-selected groups--those who apply for college or who marry or who seek a divorce, for example. Consequently, they give a biased picture of the total population. It may be precisely those who do not select themselves into these groups whose needs the schools are most seriously failing to meet in the relevant respect. Furthermore, some racial and ethnic groups are so small a proportion of the population that they are sometimes present in incidental indicator data in too few numbers to permit a reliable judgment of the trends among them; yet they, too, may be groups for whom the shortcomings of the educational system are especially great. Black and

Spanish-speaking minorities are obvious cases in point. Intentional indicators, on the other hand, can be based both on representative samples of the whole population and on over-samples of small groups that will ensure their representation in sufficient numbers (with suitable weights then applied to their responses so that they do not unduly affect the picture for the total population).

7. A good EGI enables distinctions to be made among individuals with different attributes, and especially between those who have received their education in New Jersey and those who have not.

An EGI is the more helpful as it permits the more precise identification of those groups in which educational progress or lack of progress is most conspicuous. Many incidental indicators are, or can be, categorized in terms of age, sex, racial/ethnic membership, urban/suburban/rural residence, etc. Indeed, there are more possibilities for such categorizations than this report has been able to demonstrate. The number and type of categories, however, varies from one indicator to another, and for some the appropriate types are not available at all. In particular, no incidental indicator distinguishes between persons who have been educated in New Jersey and those who have been educated elsewhere; this distinction is simply irrelevant to the purposes of health care, or law enforcement, or any of the other purposes for which they have been developed. But the distinction is of course crucial to judgments of the performance of the state's educational system. With intentional indicators in the form of survey questions, it is a simple matter to make the distinction with a

question about where the respondent went to school.[25] At the same time, the use of other questions would permit categorizations also to be made in any of the ways employed for incidental indicators.

8. A good EGI has a moderate value among at least most groups of the population.

That is, it should not already be at so high a level as to preclude the observation of progress nor at so low a level as to preclude the observation of decline. Intentional indicators again have the advantage here, since this characteristic can be deliberately built into them, whereas incidental indicators have to be taken at whatever values they have.

9. A good EGI is not subject to distortion by individuals or groups with an interest in maximizing or minimizing the appearance of educational progress.

An ever-present danger of measurement is the reactive effect--the alteration of data caused by the very process of collecting them. Intentional indicators appear to be especially vulnerable to this danger; the person who is asked a question can "choose" his answer, consciously or unconsciously, so as to produce some desired result. Thus, someone with a "grudge" against the school he attended, when presented with a series of items that he knows are going to be used to measure educational outcomes,

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[25]The ORC survey asked respondents how many years they had attended public schools in New Jersey, and the survey report divides them into those whose answer was six years or more and those whose answer was less than six years. In a future survey, the distinction could be made at another point or points, as desired, so long as the numbers in each category were large enough to permit statistically reliable calculations to be made.

might answer in such a way as to make the schools "look bad."[26] The opposite might be done by a teacher who felt that the indicators amounted to measures of his performance, or by a taxpayer who feared that low indicator levels might lead to a demand for more money for the schools. These reactive effects seem less likely to occur with incidental indicators, which by definition are derived from data not collected for purposes of measuring educational progress. Indeed, some incidental indicators are altogether "unobtrusive" (Webb and others, 1966), in the sense that the relevant data are inherent in the behavior they measure rather than being the result of any special effort at data-gathering. The proportion of the eligible population that is registered to vote is an illustration of this quality.

Ideally, then, an indicator should be unobtrusive or at least non-reactive, and incidental indicators more often meet these desiderate than intentional indicators do. But the differences are not as great as they might appear to be. In the first place, while incidental indicators may not be affected by concerns for what they show about educational institutions, they may very well be affected by concerns for what they show about the institution whose performance they more directly reflect. Crime rates, for example, say something about law enforcement; and since the data

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[26]The widespread existence of such "grudges" would itself be an indicator of the workings of the educational system! However, it would be impossible to distinguish those item responses that reflected this sort of diffuse dissatisfaction from those that indicated a genuinely low level of attainment on the goal in question.

are generally collected and published by law-enforcement authorities, distortions of various kinds creep in. Secondly, some measures that have been suggested for EGI use are themselves based on survey questions (which is why intentional and incidental indicators have not been referred to as "survey" and "non-survey" indicators); they have the appearance of non-reactiveness only because the survey was conducted prior to the time the data were put to EGI use. As this use became a matter of public knowledge, they would no longer be non-reactive.[27] Finally, the tendency of respondents to manipulate their answers to survey questions should not be exaggerated. Long experience with surveys has shown that it does not actually happen on a large scale (perhaps partly because, in addition to their immediate "selfish" interests, people also have an interest in helping to produce accurate information about public affairs), and a great deal is now known about how to phrase questions so as to minimize it.

10. A good EGI is based upon data that are inexpensive to collect.

This may be one of the most attractive-seeming advantages of incidental indicators. The collection of information can be quite costly,

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[27] It is often overlooked, for example, that Census statistics, the source of many incidental indicators, are actually based on survey questions. It is true that there is an important deterrent to manipulation of the answers to Census questions--willfully false answers carry criminal penalties--but that is not the case for any other survey; and not all false answers are "willfully" false.

but the data for incidental indicators have already been gathered, and often even published, by other agencies and so can be utilized for EGI purposes at little extra expense to the educational system. In a larger perspective, though, the costs must still be borne, and it would not seem unreasonable for these other agencies to demand that the educational system share the costs if it is to make use of the results, so this advantage may eventually be lost. Conversely, a survey intended primarily for EGI purposes could be so designed as to meet the needs of other agencies at the same time, and they could therefore be asked to contribute to its costs. Moreover, as has been pointed out, total costs could be held down by item-sampling techniques and by rotating coverage of goal areas over a period of years.

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This series of comparisons leads to the fairly clear conclusion that, if educational progress is to be measured by indicators, intentional indicators are to be preferred. They have fewer disadvantages than incidental indicators, and those that they do have can be more easily overcome. This is not to say that indicators of any kind can do the job by themselves; it should be remembered that they are, at best, indirect measures. Direct measures, in the form of in-school tests, remain indispensable for many purposes. Some combination of indicators and tests is probably the most advisable measurement strategy over the long run.

Insofar as indicators are to be used, the procedure suggested by the evidence of this investigation is to develop, for regular and routine administration, a set of survey items designed specifically for measuring the level of attainment of New Jersey's educational goals. The survey should be

conducted either by an independent agency of the state not directly involved in education, or else by a private contractor. Efforts should be made to persuade other states to administer the same items, in order to provide comparative data. (The Education Commission of the States might be an appropriate channel for such efforts.)

At the same time, it must be recognized that the measurement properties and possibilities of even intentional indicators leave much to be desired at the present time. Consequently, it would be wise to initiate a program of research and development aimed at improving the reliability, the validity, and the comprehensiveness of the survey items, and at determining the kinds and sources of data that would help establish the range of reasonable levels of goal attainment. Where the state's sights should be set within the range is ultimately a matter for New Jersey's citizens to decide.

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